

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hiroyuki KADOTA

Serial No.:

Filed: November 21, 2001

Title: ELECTROLYTIC GOLD PLATING METHOD AND APPARATUS
THEREFOR

PRELIMINARY AMENDMENT

Box Non-Fee Amendment
Commissioner for Patents
Washington, D.C. 20231

Sir:

Please enter the following amendments to the claims prior to the examination of the application.

IN THE CLAIMS:

Please amend claims 12-13 and 15-16 as follows:

12. (Amended) An electrolytic gold plating apparatus according to Claim 9 or 10, wherein said means for measuring said sulfurous acid in said complex or sulfuric acid is an automatic titrator or a liquid chromatograph.

13. (Amended) An electrolytic gold plating apparatus according to Claim 9 or 10, which comprises a monitoring unit for displaying a value measured by at least one of said means for measuring a light intensity, said means for measuring said pH, said means for measuring sulfurous acid and said means for measuring sulfuric acid.

[illegible]

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend claims 12-13 and 15-16 as follows:

12. (Amended) An electrolytic gold plating apparatus according to [any one of claims 9 to 11] Claim 9 or 10, wherein said means for measuring said sulfurous acid in said complex or sulfuric acid is an automatic titrator or a liquid chromatograph.

13. (Amended) An electrolytic gold plating apparatus according to [any one of claims 9 to 12] Claim 9 or 10, which comprises a monitoring unit for displaying a value measured by at least one of said means for measuring a light intensity, said means for measuring said pH, said means for measuring sulfurous acid and said means for measuring sulfuric acid.

15. (Amended) An electrolytic gold plating apparatus according to [any one of claims 8 to 14] Claims 8 to 10 and 14, which comprises:

an automatic adding solution supply unit for adding said plating solution based on a value obtained by measuring at least one of an amount of gold colloid of said plating solution, a value of pH of said plating solution, a concentration of sulfurous acid in gold sulfite complex of said plating solution and a concentration of sulfuric acid of said plating solution;

an automatic pH adjustment unit for adjusting pH; and

an automatic water supply unit for supplying water for evaporated water.

16. (Amended) An electrolytic gold plating apparatus according to [any one of claims 8 to 15] Claims 8 to 10 and 14, which comprises:

an anode, an object to be plated and an opening portion in a plating bath, said anode being vertically arranged, said object to be plated being arranged opposite to said anode, said opening portion being arranged at a side surface portion of said plating bath;

a substrate stage for vacuum-holding said object to be plated, said substrate stage detachably attached to said plating bath in a state of blocking said opening portion; and

a pushing unit for pushing and releasing said substrate stage to and from said opening portion.

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